

Roland®

SH-32

SYNTHESIZER GUIDE BOOK



Section 1 What is the SH-32?

Welcome to the SH-32 Guide Book. With this booklet and CD, you can gain a better understanding of this powerful desktop synthesizer, complete with audio examples. This first section describes the SH-32 in general terms for those new to synthesizers.

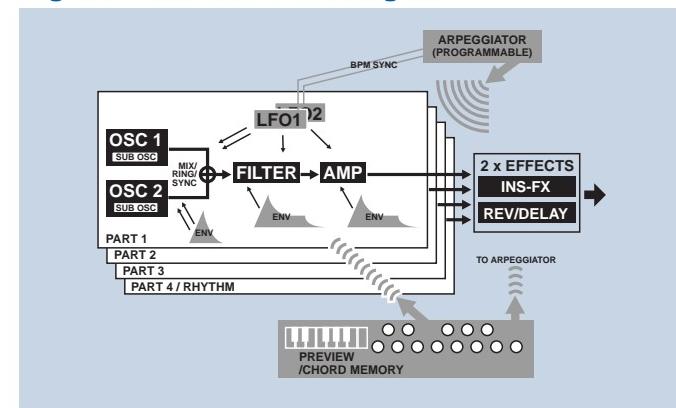
Overview

The SH-32's front panel is designed for easy editing. There are 17 sliders that control envelopes, etc.; four large knobs that control filter, etc.; four smaller knobs for selecting effects, etc.; 49 self-illuminating buttons; six buttons and a 3-digit LED display. The rear panel contains all the basic connections: stereo outputs, MIDI In and Out, a headphone output, footswitch jack and power switch. The SH-32's compact, portable design makes it perfect for desktop use or for use in a DJ booth, while its retro-styled interface lets you tweak and program sounds with ease.

The SH-32 contains the following:

- 2 oscillators, a filter, amp and two LFOs per sound. While being fully digital on the inside, you have the ability, using knobs and sliders, to create sounds using an analog-style interface.
- 67 oscillator waveforms and 4 rhythm sets. Handles layering and multitimbral sound creation with 32-voice polyphony and 4-part multitimbral operation.
- 2 independent effects processors: 10 types of reverb/delay and 35 insertion effects.
- Built-in programmable arpeggiator with chord memory function.

Figure 1: SH-32 Block Diagram



The self-illuminating buttons, mentioned above, are what make it possible to fit so many features in such a functional, compact box. These buttons include those for sound editing with which the current status is shown using three types, or "stages", of indication: off, illuminating, and flashing. This allows you to edit intuitively

from the front panel without having to navigate back and forth through a hierarchical interface. Thirteen buttons at the bottom of the front panel function as a virtual single-octave keyboard when the Preview button is pressed. This feature allows you to verify sounds and play performances without having to connect a MIDI keyboard.

Wave Acceleration Synthesis

Let's explore some of the actual sounds while examining some features. There are two basic ways that sounds can be saved on the SH-32. One is called "Patch" mode and the other is "Performance" mode, in which up to four patches (including rhythm sets) can be overlapped and played at the same time. You can use either mode, depending on your needs.

Let's explore Patch mode first. Listen to some of the preset sounds using the virtual keyboard on the front panel. You will probably notice how fat and powerful the notes sound. You might be wondering how this is possible.

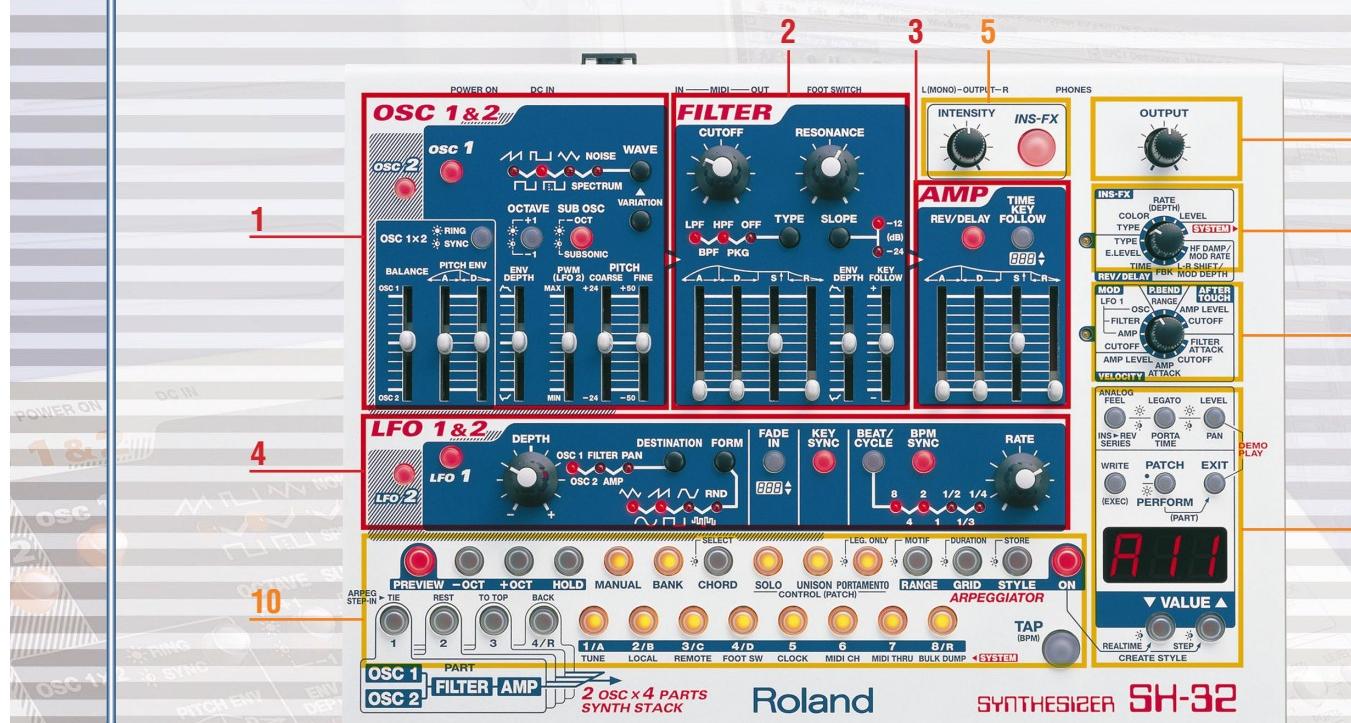
When designing the SH-32, Roland developed a proprietary sound generating system called "Wave Acceleration Synthesis." Wave Acceleration is a new way to generate sound that was developed by studying famous vintage synthesizers and analog modeling synths. The results were then quantified so that Roland could put the best of these qualities into the SH-32. Words like "fat," "distinct" and "cutting" all come to mind when playing the presets. And these sounds are designed to fit in any mix—no need for extensive EQ and outboard effects.

This punchy sound can also be found in the built-in rhythm sets. The SH-32 contains four kits (two preset and two user) with waveforms taken from Roland's classic TR-808 and -909 Rhythm Composers. We're sure you'll notice how rich the bass presence is in not only the kick drum, but even in the toms.

Oscillator

Let's take a closer look at Wave Acceleration Synthesis by investigating the waveforms contained in the oscillator section. For those who don't know, oscillators are what determine the basic characteristic of a sound. The SH-32 includes seven basic waveforms: saw, square, pulse, PWM, triangle/sine, Spectrum, and Noise. These also include variations capable of producing a variety of sound characteristics (Figure 2), translating into over 67 waveforms total! And each waveform has that fat analog feel, so you'll never experience the dull, lifeless sounds that result when sampling an analog synthesizer. (You will notice this even with the PWM and Noise waveforms.) But don't take our word for it, let your own ears be the judge!

The SH-32 User Interface



1. Oscillator Section

The SH-32 includes two independent oscillators. The basic waveforms are saw, square, pulse, PWM, triangle/sine, Spectrum, and Noise. Each waveform also includes several variations (except for PWM), so be sure to check them out when auditioning the SH-32.

Pitch can be varied in octaves (Octave button), in semitones over two octaves with the Pitch Coarse slider, and over ±50 cents using the Pitch Fine slider. Also, the sub oscillator (SUB OSC), which is used for adding a sub-octave element, contains a Subsonic mode for adding a special frequency component for ultra-thick bass sounds. There is also an Oscillator Sync function, a ring modulator, and a pitch envelope, which changes the pitch of a sound over time.

By pressing the OSC1 and OSC2 buttons at the same time, both become the editing target, which makes it easy to apply the same settings to both.

2. Filter Section

The filter can be set to one of the following settings: low pass, band pass, high pass, peaking, and OFF. You can switch between -24 dB/oct for a tight sound and -12 dB/oct for a smooth sound. A Key Follow function is also provided, which changes the cutoff frequency in accordance with the key pressed on the keyboard.

3. Amp Section

The amp section contains an ADSR-type envelope generator. Using the Key Follow function you can change the time that follows the decay time for each pitch range. The On and Off buttons for the ten types of reverb and delay, which can be used as loop effects, are located here. The Level button located on the right side of the front panel can be used to control the volume of patches, rhythm sets and performances.

4. LFO Section

There are two independent LFO sections and you can choose among seven waveforms including random. Several parameters are available such as Fade In, which allows you to set the time it takes to reach the maximum LFO amplitude, and Key Sync, which causes the LFO phase to start each time a key is struck. The LFO rate can be automatically synchronized to BPM; tap input is also possible. As with the oscillators, simultaneous editing is possible by pressing the LFO1 and LFO2 buttons together.

5. INTENSITY/INS-FX

This area is used to turn on and off one of the SH-32's 35 insert effects, and to make settings for the particular effect selected.

6. Output Level

Adjust the level of the main out and headphone out jacks here.

7. FX/SYSTEM

Adjust the insertion effect and reverb/delay parameters. When set to the System position you can set the SH-32's overall system parameters (selected from buttons at the bottom of the front panel).

8. MIDI Setting Knob

Select parameters to be set when controlling the SH-32 with information transmitted from external MIDI devices.

9. Button Group 1 and Data Entry

In addition to "Analog Feel," which adds a slight wavering of pitch to produce an analog synth-like sound, these buttons are for setting portamento, legato, level and pan, and for switching between patch/performance and entering data. The Exit and Level/Pan buttons, when pressed together, play a demo song.

10. Button Group 2

The buttons at the bottom of the front panel have a variety of functions. The basic functions are patch number selection, part selection, calling up chord memory and system parameters, setting the arpeggiator and programming. Also, turning on the Preview button activates a "virtual" keyboard which consists of self-illuminating buttons lit orange (octave shifting is possible). You can use the virtual keyboard to perform and verify sounds without using an external MIDI keyboard. You can also play sounds continuously by turning on the Hold button.

► Of particular note are the 20 variations provided for the Spectrum waveform. These waveforms are based on special harmonic overtones and formants that would be difficult to express on subtractive analog synthesizers. But with the SH-32, you can turn them into gorgeous digital synth sounds or unique lead sounds difficult to produce on an analog synthesizer.

Adding to the effectiveness of the SH-32's sound is the sub-oscillator with a unique Subsonic mode for ultra-thick bass sounds. Just choose from one of three settings: octave down, Subsonic mode, and off. The result is deep, booming bass that dance music producers crave. And since the subsonic mode is more than a simple low-range EQ boost, you can achieve fantastic effects even when using prominent lead sounds and filter sweep pads.

Filter and Modulation

This section explains the SH-32's filter section. The filter is what determines the timbre of a sound. By adjusting the cutoff, you can make a sound seem brighter or darker. Add some resonance and you get that distinct "electronic" characteristic synthesizers are known for. There are four filter types on the SH-32: low pass, band pass, high pass, and peaking. The slopes can be switched between -12dB and -24dB for truly sharp and penetrating edges. The peaking filter is particularly powerful—keep an eye on the resonance to avoid blowing your speakers! The SH-32's filter is so responsive, you can even produce wah-wah like sounds by adjusting the cutoff while leaving the resonance fixed.

Like the oscillators, the SH-32's filter was designed with analog feel. So while there is no analog circuitry inside, you still get that sharp analog edge and easy knob- and slider-based control. Be sure to check out the Envelope Depth slider, the method for changing the emphasis of the ADSR envelope on the filter cutoff. Many musicians place a high value on analog synthesizers because it's easy to edit sounds. The SH-32 fits right into that "analog" niche by successfully re-creating the sound and feel of these classic instruments.

Figure 2: Waveform List

Waveform Group	Number of Variations	Description
Sawtooth Wave	12 (1~12)	Often used in creating characteristic synthesizer sounds. Variation 12 is constructed from multiple, detuned, sawtooth waves layered together.
Square Wave	10 (1~10)	Often used in creating characteristic synthesizer sounds. The subtle differences in waveforms that a variety of popular, classic synthesizers had can be expressed through switching variations.
Pulse Wave	9 (1~9)	The Pulse group contains nine pulse wave variations you can switch through, with duty cycles ranging from 5% to 45%, set in multiples of 5%.
PWM Wave	1	With this waveform, you can have the pulse width of a square wave change periodically. Use this when you want to create subtle changes in the tone.
Triangle Wave/Sine Wave	5 (1~5)	This tone includes few harmonics and no unusual characteristics. The subtle differences in waveforms that a variety of popular, classic synthesizers had can be expressed through switching variations.
SPECTRUM	20 (1~20)	You can select waveforms that are difficult to achieve with general analog synthesizers, such as voice-type waveforms and other waveforms with special harmonic structures and waves with formants.
NOISE	10 (1~10)	Select from different noise types, including white noise, pink noise, and noise for which the pitch can be changed with the keyboard.

This section goes into detail on how to get the most out of the SH-32. We recommend that you listen to the attached audio CD while reading this section.

LFO

Equipped beneath the oscillators and filters is the LFO section. Short for "Low Frequency Oscillator," LFOs are used to introduce variation to a sound such as vibrato. The two main elements of the LFO section, Depth and Rate, can be precisely controlled by knobs. In addition to the LFO 1 and LFO 2 Select buttons you can select among five destinations: OSC1 and OSC2 for obtaining vibrato, Filter for obtaining a wah effect, Amp for obtaining tremolo, and Pan for obtaining an auto-pan effect. There are also seven LFO waveforms including random.

The BPM Sync feature is also unique and convenient. This allows you to synchronize the LFO rate with the BPM (tempo can be input using the Tap function or with the Value buttons). You can select among seven settings—16th notes, triplets and 8th notes—up to two measures in length. This function makes the SH-32 very useful for dance music production where tempo-based effects are frequently used.

Aside from these basic features, the SH-32 includes 35 insertion effects like distortion and phaser, ten types of reverb and delay (loop effects), a user-programmable arpeggiator, plus a Chord Memory function for creating chords from a single note.

Track 01-07 High-quality waveforms for unlimited sound creation

Let's take a look at the basic waveforms. The SH-32 contains seven waveform groups: saw, square, pulse, PWM, triangle/sine, Spectrum, and Noise. Each of these has variation waveforms, for a total of 67 oscillator waveforms. These waveforms include those found on traditional analog synthesizers, plus all-new waveforms for creating sounds never heard before.

To begin, let's audition some typical preset patches. Let's start with C11 "Bass" which uses a basic sawtooth waveform. This demonstrates the fat and powerful SH-32 character (Track 01). The preset "Bass2" also demonstrates this quality (Track 02).

To check out the Oscillator Sync function, select patch C12 "Sync Lead 1" (Track 03). And for leads, patch D18 "Comp-F Lead" has a powerful presence (Track 04). Next, listen to patch C13 "Slicer 1" which uses the Slicer Sync effect to achieve a changing rhythmic effect (Track 05). You will see that all sorts of characteristic synthesizer sounds can be produced by a single SH-32 when you listen to C23 "Ring Bell" (Track 06), which uses Spectrum, and C25 "Noise Pad" (Track 07), which uses Noise.

When listening to these preset patches, you should notice the high quality of the SH-32's waveforms. To demonstrate this further, choose any of the Square waveform variations and turn on the sub-oscillator with Subsonic function. This alone brings out the warm atmosphere of an analog synthesizer. The amount of PWM applied is also similar to an analog synthesizer. The Spectrum waveform, on the other hand, produces sounds characteristic of digital synthesizers. Having access to both of these qualities in the same box is part of what makes the SH-32 so fascinating.

Track 08-09 Onboard rhythm sets with complete editing capabilities

The SH-32 has four rhythm sets (two preset and two user). As stated earlier, these sets feature rich bass qualities, but the large number of waveforms contained should also be noted.

For starters, there's a full sampling of sounds taken from the TR-808 and TR-909 Rhythm Composers. Accurate to the last detail, these sounds can be morphed into entirely new sounds by varying the pitch, filters, envelopes and effects. The classic CR-78 and TR-606/707/626 waveforms are also included, plus a healthy dose of synth percussion instruments like LoFi Bongo, 909 Dist Kick, Jungle Kick and Reggae Rim.

Now, listen to "Power Beat" and "HipHop Beat" (Tracks 8 and 9). These will give you a glimpse of what is possible when these sounds are layered and arpeggiated.

Multimode filter with smooth, analog feel

The filter is probably one of the most important facets of synthesizer sound creation. The SH-32 has four filter types: low pass, band pass, high pass, and peaking (there is also an OFF setting). The peaking filter strongly emphasizes harmonics in the frequency range set with the cutoff. By periodically changing the cutoff frequency you can achieve a powerful wah effect. For filter slopes, you can switch between -12 dB/oct, which is smooth sounding and suitable for pads, and -24 dB/oct, which is tight and powerfully resonating.

Sound transitions are also very natural. The response when using filter envelopes and the Key Follow function is true to the analog tradition. You will no doubt feel just how smoothly and easily sounds change when following the direction specified by the knobs and sliders. The SH-32 provides a wide setting range for cutoff frequencies and resonance width. Whether it's a synth bass with a strongly boosted bottom range or a hard techno sequence, you'll get a response that's both aggressive and accurate. (To make the SH-32's filter scream, just crank up the resonance!) Even if you don't like to program sounds, we strongly encourage you to experiment with the filters. You'll like the results.

Wave Acceleration Synthesis



Roland's Wave Acceleration Synthesis employs a proprietary "accelerated generation" technique for creating synthesizer waveforms. This technique allows the oscillators in Roland's custom synthesis engine to yield more polyphony and waveshape variations when compared to conventional "Analog Modeling" methods. The Wave Acceleration engine also includes highly-optimized filters and other modifiers. The result is an endless variety of amazingly expressive, incredibly fat and punchy synthesizer sounds—from ground-shaking vintage synths to shifting exotic textures and more.

Two independent LFOs with BPM sync

The LFO waveforms are triangle, sine, sawtooth, square, trapezoidal, sample & hold, and random. Convenient features are included such as simultaneous editing of both LFO1 and LFO2 by pressing both LFO1 and LFO2 switches at the same time, and the ability to initialize either one by pressing either LFO1 or LFO2 together with the EXT key. A wide setting range is provided for setting the rate width, and when the LFO fade-in function is used, transpositions are possible for dynamic musical changes.

Notable in the LFO section is the ability to synchronize the phase with a song's BPM. In addition to setting by tapping, synchronization can be done with an external MIDI clock by setting system parameters. Another convenience is the Beat/Cycle function, which lets you set four beats of the set BPM to one LFO phase. Furthermore, being able to select among 8, 4, 2, 1, 1/2, 1/3 and 1/4 (in other words, from 2 measures up to 16th notes), opens up a world of inspiring musical possibilities.

Effects from mild to extreme

The SH-32 is loaded with killer effects capable of transforming your sounds even further. These effects can be broadly classified into two groups: insertion effects and reverb/delay. With so many effects, you don't need any outboard gear to create finished-sounding patches on the SH-32.

The SH-32's two effects sections can be connected serially (for connecting delay after distortion, for example) or connected in parallel. Parallel connection is useful when you want to set the send level individually for each part of a performance or for each tone in a rhythm set.

Separate reverb and delay are also included in the insertion effects to broaden your toolbox. This allows you to use reverb and delay at the same time or use the two types of delay (long and short) if needed.

EFFECTS SECTION



◀ Select effect parameters with the knob and set values with the Value buttons

◀ Use the button to turn INS-FX on and off. Adjustments can be made with the Intensity knob.

Insertion Effects

STEREO EQ/EZ FILTER/ISOLATOR/AUTO WAH/OVERDRIVE/DISTORTION 1/DISTORTION 2/STEREO COMPRESSOR/STEREO LIMITER/PHASER/ROTARY/HEXA-CHORUS/TREMOLO CHORUS/SPACE-D/STEREO FLANGER/STEP FLANGER/STEP FLANGER SYNC/RING MODULATOR/LOFI/LOFI NOISE/Slicer/Slicer Sync/Tremolo/Tremolo Sync/Auto Pan/Auto Pan Sync/2-Voice Pitch Shifter/Feedback Pitch Shifter/Stereo Delay/Stereo Delay Sync/Long Delay/Long Delay Sync/Resonance Delay/Reverb/Gated Reverb

Reverb/Delay

REVERB ROOM/REVERB STAGE/REVERB HALL/STEREO DELAY/STEREO DELAY SYNC/LONG DELAY/LONG DELAY SYNC/PAN DELAY/MODULATION DELAY/STEREO CHORUS

Many unique effects are also built into the SH-32. Slicer, for example, is a stereo effect that automatically and continually cuts the sound. A second Slicer type is also provided, which cuts to the BPM of your song using 16th or dotted 8th notes. This effect is useful when, for example, you want to change a filter pad to a rhythmic cutting pattern.

Distortion 1 and 2 are perfect distortion effects for modern musical use. For some truly distinctive effects, try selecting among the record noise types (LP, EP, SP, and rnd) for the LoFi Noise effect. The SH-32's phaser, which offers a natural phase feeling, captures the true feel of this classic effect without sounding digital. For modulation effects check out the step flanger (Track 10) and ring modulator (Track 11).

Analog Feel for true vintage sounds

Another one of the SH-32's unique features is Analog Feel. This function is designed to add instability to a sound's pitch—just like analog synths of the past. The amount can be set anywhere between 0-127 with a higher value producing more instability. Even though the effect is analog in nature, the pitch is still being controlled digitally! Imagine how useful this effect would be when playing a lead sound with lots of portamento. And, unlike analog synthesizers, pitch instability can be controlled. Experiment with this function to get the best results.

Chord memory function for composing and performing

Let's dive a little deeper now and take a look at the SH-32's Chord Memory function. This function allows you to play, by pressing a single key on the keyboard, a harmony which was registered beforehand as a "chord form." For example, if you register note C to be Cm7, you will get a Dm7 chord by pressing D and an Em7 chord by pressing E, etc. (Track 12). This function was commonly found in synths of the early '80s. However, today, with music such as Artcore in which sampled electric piano harmonies parallel the riff, chord memory functions offer you a fascinating and creative new way to make music.

To make life easy, the SH-32 comes with 64 chord forms already built in. You can come up with cool, quick-and-dirty riffs right away by selecting chord forms and playing the keyboard at random. (When thinking up ideas for remixes users will probably use this procedure a lot.) Preset chord forms include all the basic chords as well as sus4, half diminished, 6/9, and those found on Artcore, etc., such as minor 9th and minor 11th.

Of course, it is also possible to create and store your own original chord forms manually. The procedure is extremely simple: Press the Chord button and then play the chord you want to set with a connected MIDI keyboard, or use the Preview function (virtual keyboard) on the SH-32. You can connect a foot switch and use it to change the chord form numbers (the numbers saved to memory). This is great for gigs and for polishing up musical ideas.

Programmable arpeggiator—even more powerful with chord memory

Next, we will introduce the arpeggiator. As you know, the function of an arpeggiator, as a creative tool, goes beyond its inherent purpose of simply splitting up and playing chords note-by-note. It has many important roles including the production of materials for making phrases, coming up with new song ideas, making basic arrangements, and creating new rhythm patterns.

The SH-32's arpeggiator is powerful in many ways. First of all, it comes with 64 preset arpeggio styles and 64 rhythm styles that use the preset rhythm sets. The patterns are as varied as they are

inspired. Notable arpeggio styles include those in cutting-edge dance music as well as trance riffs. Rhythm styles include not only the standard house and techno patterns, but R&B, drum 'n' bass, 2-step and even reggae.

There are many parameters you can choose from. When playing preset patterns, you can change the beat or swing (Grid adjustment), change staccato and tenuto (Duration adjustment), change the pitch range (Range), or change the ascending/descending variation (Motif). Note, in particular, the great number of Motif variations provided. Aside from the simple low-to-high and high-to-low, the ten types available include "UP. H", in which the arpeggiator plays, in order, from the lowest key pressed while both the lowest and the highest notes are played each time, and "rn. L", in which the keys pressed are played at random while the lowest note pressed is played each time. These fun variations alone are likely to keep you busy for quite a while.

Now let's take a look at the setting variations for Duration. Normally, the level of staccato is set using a numerical parameter. On the SH-32 you can optionally perform this setting by controlling filters on the arpeggiator with "Ft1" and "Ft2". With Ft1, the note number values generated by the keys pressed are replaced with the filter cutoff setting and the sound changes (Track 13). With Ft2, the filter cutoff setting changes with the note number played when the arpeggiator style is being created, regardless of which key is pressed during the performance. Because of this, a fixed pattern step change is obtained that is similar to step modulator. Arpeggio style 52a is also worth checking out (Track 14) as it lets you play in an ethnic style.

Still, the most outstanding feature of the SH-32's arpeggiator is its ability to work with the Chord Memory function, mentioned earlier. If you are a trance-techno fan, you won't want to miss out on this feature—just hit a note for instant trance riffs!

This arpeggiator, of course, also lets you create your own original styles. You can program using either step recording or realtime recording. Select the grid number and press the Write button to start the metronome (with accented beats) for guidance. Then you can quickly begin note input using either the SH-32 virtual keyboard or an external MIDI keyboard. You can input not only arpeggios, but conveniently input original rhythm styles as well.

To make even more advanced arpeggios, simply connect an external MIDI sequencer and load the phrase data. (The SH-32 can load a note's pitch, duration and velocity for some highly expressive arpeggios.) Once you've created an arpeggio style you like, simply store it for instant recall later.

A full-blown MIDI module

Increase the flexibility of the SH-32 by combining it with an external MIDI device. The SH-32 comes with a set of MIDI In and Out ports; a soft Thru is available so sound modules can be connected serially.

ORIGINAL DEMO SONG



"Natal Dance"

Composer's Notes by WATUSI
(COLDFEET)

Going with my impression of the SH-32 being a modern representation of the good qualities of the '80s and '90s music scene, my overall approach in composing this piece was, while applying the qualities of New Wave, to try to create a chilling feel with a tribal pattern. (The truth is, being stimulated by the sounds of this box, I ended up proceeding on a whim, going from idea to idea.) My tools were an SH-32 combined with Digital Performer. I thoroughly edited sounds that I felt needed attention. Those sounds led to phrases, which I entered as MIDI data and then recorded, one by one, to hard disk. From there I worked on the overall composition. This was my workflow. I kept my use of plug-in effects to just partial use of an equalizer and compressor. Mainly, I used the onboard effects of the SH-32.

As for the main sound, I wanted to introduce the SH-32's great rhythm sets so I used lots and lots of TR-909 sounds, making them a central fixture of the piece. For synth sounds I relied on preset patches and edited them over and over. (For me, that was the fun part of using the SH-32.) I made liberal use of features such as the ring modulation and pan effects, the auto arpeggiator, and chord memory.

Starting from the top, in order, I somehow thought up the intro chord when playing the keyboard after creating this sound. Also, the low-pitched,

The SH-32 is complete with all the MIDI parameters you need: Local, MIDI channel and clock settings, etc., can be made after turning the effects setting knob to the SYSTEM position. Simply call up parameters using the corresponding buttons and change the settings with the Value buttons. You can freely set control channels for patch and performance modes. The arpeggiator and LFOs can be synchronized with an external MIDI clock, and SH-32 settings can be transferred to an external sequencer as system exclusive messages.

A dedicated knob is provided for parameters such as aftertouch and velocity. Select the parameter with the knob and enter the value with the Value buttons. Flexible control is provided. For example, you can use modulation messages to change the oscillator pitch, filter cutoff and LFO pitch fluctuation applied to the amp level; and use the pitch bend, after touch and velocity messages to make fine changes to the sound. By connecting a dual foot switch, you can control the on/off status of insertion effects and reverb/delay, and navigate up and down through the chord memory and arpeggio style numbers.

We hope this booklet and CD have given you a better idea of the power that lies within the SH-32 Synthesizer, but the best way to experience this tabletop beast is to play one for yourself. So go ahead and check one out at your local Roland dealer today!

sine-wave-like sound was edited from a -909 tom. The sound you can hear on the right channel had its pitch tweaked in real time. Now, following the development, the percussive, filter-like sound you hear was recorded after going nuts tapping a rhythm patch and then switching the filter type using a note number followed by tweaking to death the basic cutoff and resonance. The flashy, arpeggio-like phrase is patch D57 with some fine-tuning. The descending and ascending arpeggio-like sound is preset pattern 44a. After using it to create a phrase using the chord memory, a filter in the LFO section was used to produce the squirmy feeling.

Further developed parts employed typical motifs using the chord memory along with pads and a metal kalimba. The part which returns you to the intro pattern was created exclusively using the arpeggiator. The rhythm styles that spin out are a parade of preset patterns: 76, 83, 84, 87, and 88. They are all blurred, 6-beat patterns. The final whistle-like sound I made from scratch using portamento with a full-on analog feel.

The sounds of the SH-32 stirred my feelings because they contained a sort of inexactness that lent a slightly rough-edged, analog feel. That is the quality I picked up on and pursued when choosing parts to edit. It is my hope that when you listen to my piece you will be able to feel this quality, which differs from the so-called PCM synth sound.

Patch List

Bank C (User)			Bank D (User)		
No.	Patch Name	Comment	No.	Patch Name	Comment
C11	Bass 1	Bass sound with Resonance effect	D11	SEQ 2	Sound for analog sequences
C12	SyncLead 1	Oscillator Sync lead sound	D12	SEQ 3	Sound with Sweep, typically used in Techno and other styles
C13	Slicer 1	Beat sound that uses the LFO	D13	Reso BPF 1	Techno Sweep sound variation
C14	Arpeggiator Saw 1	Dance sound with ample use of Arpeggiator	D14	Reso BPF 2	Techno Sweep sound with special filter characteristics
C15	Dist Lead	Feedback lead with distortion strongly applied	D15	Reso HPF	Techno sound with oscillator layering fourths
C16	LFO Pulsing	FX sound with heavy use of Noise waveform and LFO	D16	LoFiRing	LoFi sound using Ring Modulator
C17	Spark Noize	Noise sound used in the demo song "SPANK"	D17	4th Saws	Lead sound used in the demo song "SPANK"
C18	GR300 Lead	Lead sound using the distinctive analog-synth Saw wave	D18	Comp-F Lead	Comp-F sound
C21	Synth Orch	String PAD sound	D21	4th Reso Saw	Techno sound with Resonance
C22	Techno Saws	Classic deeply-dubbed Dance sound	D22	SEQ 4	80's-style analog sequence sound
C23	Ring Bell	Bell sound produced with the Ring Modulator (INS-FX)	D23	SEQ 5	Sound for analog sequence PolySynth sound
C24	Filter Arpeggiator	Sound with a strong sense of heat produced with filter controlled by Arpeggiator	D24	PolySynth 1	Synth sound used in the demo song "Compfusion"
C25	Noise Pad	Noise sound with distinctive character	D25	PolySynth 2	Synth sound used in the demo song "TRAVELER"
C26	Low Sweep	Sweep sound typical of analog synth	D26	PolySynth 3	Saw stack sound used for Dance, Techno, and other styles
C27	Bass Beat	Bass sound with a sense of pulsation from the LFO	D27	PolySynth 4	
C28	Arpeggiator Saw 2	Dance sound with ample use of Arpeggiator	D28	Comp-F Poly	
C31	Moving Noise	String sound using LFO	D31	TRAVELER 1	
C32	Moving Strings	String sound with changes produced using the LFO	D32	Stack Saw 1	
C33	Soft Lead	Distinctive analog-synth soft lead sound	D33	Stack Saw 2	
C34	Arpeggiator Saw 3	Sequenced sound using Arpeggiator	D34	Stack Saw 3	
C35	PWM Pad	PAD sound using the PWM function	D35	Brass 1	Classic analog brass sound
C36	Techno Voice	Synth voice sound with Resonance	D36	Brass 2	Soft synth brass
C37	Analog E.Piano	Electric piano-type sound characteristic of analog synths	D37	Brass 3	Soft synth brass with lots of resonance
C38	Zap	Classic sound that uses a higher Resonance setting	D38	SynthPad 1	Synth PAD sound using saw wave
C41	Bass 2	5th Bass such as used in drum and bass	D41	SynthPad 2	Analog PAD sound
C42	Bass 3	Soft bass such as used in Hip Hop	D42	SynthPad 3	Soft PAD sound with sweep
C43	Bass 4	Classic SH-101-type bass sound	D43	SynthPad 4	
C44	Bass 5	SH-101-type bass sound with Resonance applied	D44	SynthPad 5	
C45	Bass 6	Classic Mini-type bass sound	D45	SynthPad 6	
C46	Bass 7	Synth bass using saw wave	D46	SynthPad 7	
C47	Comp-F Bass	Bass sound used in the demo song "Compfusion"	D47	SynthPad 8	
C48	Bass 8	Bass sound with Resonance applied (variation)	D48	Slicer 1	PAD sound using Phaser
C51	Bass 9	Bass sound using LFO function	D49	LFO Pad	PAD sound using LFO
C52	Bass 10	Bass sound using multiple oscillators	D50	StepFanger 1	PAD sound using Step Fanger
C53	Bass 11	Bass sound with Resonance applied (variation)	D51	StepFanger 2	Analog percussion sound
C54	Bass 12	TB-303 bass sound, as used frequently in Techno and other styles	D52	StepFanger 3	Analog tambourine-like sound
C55	Bass 13	Bass sound used in the demo song "SPANK"	D53	StepFanger 4	Driving sound used in Electronica and other styles
C56	Spank Bass	Bass sound with distortion applied	D54	StepFanger 5	Dance sound with ample use of Arpeggiator
C57	Bass 14	Pipe lead sound using triangle wave	D55	StepFanger 6	FX sound with ample use of LFO Slicer
C58	Lead 3	Pipe lead sound with combined rectangular wave and noise	D56	SynthFX 1	FX sound with ample use of LFO
C61	Lead 4	Lead sound with combined triangular wave and noise	D57	SynthFX 2	Classic analog FX sound using sample and hold LFO
C62	Lead 5	Lead sound using saw wave	D58	SynthFX 3	FX sound using LFO and Noise
C63	Lead 6	Lead sound with combined rectangular wave and pulse wave	D59	SynthFX 4	Sweep FX sound
C64	Lead 7	Lead sound with phaser added	D60	SynthFX 5	Classic FX sound using pink noise
C65	Lead 8	Lead sound with Resonance	D61	SynthFX 6	Bell FX sound with delay added
C66	Lead 9	Lead sound with soft distortion added	D62	SynthFX 7	Noise Sweep FX sound
C67	Lead 10	Lead sound using PWM	D63	SynthFX 8	Analog sound simulating drops of water
C68	Lead 11	Lead sound using SPECTRUM waveform	D64	SynthFX 9	FX sound used in the demo song "SPANK"
C71	Lead 12	Lead sound using Oscillator Sync	D65	SynthFX 10	Synth sound used in the demo song "TRAVELER"
C72	Lead 13	Lead sound using Oscillator Sync	D66	SynthFX 11	
C73	Lead 14	Lead sound using Distortion	D67	SynthFX 12	
C74	Lead 15	Lead sound with distortion and delay applied	D68	SynthFX 13	
C75	Lead 16	Synth organ sound	D69	SynthFX 14	
C76	Syn Organ 1	Synth star	D70	SynthFX 15	
C77	Syn Organ 2	Synth bell sound	D71	SynthFX 16	
C78	Synth Star	Synth bell sound variation	D72	SynthFX 17	
C81	Bell 1	Analog synth piano-type sound	D73	SynthFX 18	
C82	Bell 2	Analog synth clavi sound	D74	SynthFX 19	
C83	Analog Piano 1	Analog clavi sound with distinctive attack	D75	SynthFX 20	
C84	Synth Clavi 1	Analog keyboard sound with Resonance	D76	SynthFX 21	
C85	Synth Clavi 2	Analog clavi sound	D77	SynthFX 22	
C86	Analog Key 1	Analog keyboard sound with Resonance	D78	SynthFX 23	
C87	Analog Key 2	Analog keyboard sound	D79	SynthFX 24	
C88	SEQ 1	Sound for analog sequences	D80	INIT PATCH	

Rear Panel



Specifications

● **Sound Generator:** 2 x Oscillators (with Sub Oscillator, PWM, Oscillator Sync, or Ring Modulation), 1 x Filter (LPF/BPF/HPF/PKG/OFF), 1 x Amp, 2 x LFO (7 forms) ● **Note:** Patches using Oscillator Sync will be monophonic. These patches can be used in Part 1. Sub Oscillator, PWM, Oscillator Sync, and Ring Modulation cannot be used together in the same patch. ● **Parts:** 4 (or 3 + 1 Rhythm) ● **Maximum Polyphony:** 32 voices ● **Waveform:** 67 waves (7 categories) for main oscillators, 63 rhythm waves for rhythm sets ● **User Memory:** Patches: 128, Rhythm Sets: 2, Performances: 64 ● **Preset Memory:** Patches: 128, Rhythm Sets: 2, Performances: 64 ● **Arpeggiator:** Style Programmable (Step Input/Realtime Input), Arpeggio Styles: 64, Rhythm Styles: 64, Tempo = 20.0–250.0 BPM ● **Chord Memory:** Chord forms: 64, Tempos: 8 segments, 3 characters (LED) ● **Connectors:** Output Jacks (L/MONO, R), MIDI Connectors (IN, OUT), Foot Switch Jack, Headphones Jack (Stereo), AC Adaptor Jack ● **Power Supply:** AC Adaptor (AC1 Series/PSB-1U) ● **Current Draw:** 1,000 mA ● **Dimensions:** 303 (W) x 228 (D) x 91.5 (H) mm / 11-15/16 (W) x 9 (D) x 3-5/8 (H) inches ● **Weight:** 1.9 kg/4 lbs 4 oz ● **Accessories:** AC Adaptor (AC1 Series/ PSB-1U)

Performance List

No.	Performance Name						
1-1	Power Beat	3-1	Clavi Beat 1	5-1	Sync Beat	7-1	Bell ARP 3
1-2	Techno Beat 1	3-2	Noise Beat 3	5-2	Noise Beat 6	7-2	Pulsing Pad 2
1-3	HipHop Beat 1	3-3	LFO Low Beat	5-3	Organ Beat	7-3	Noise Beat 9
1-4	HipHop Beat 2	3-4	Saw Beat	5-4	Stack Pad 2	7-4	Dance Beat 2
1-5	LoFi Stack 1	3-5	Analog Gamelan	5-5	Sweep FX	7-5	Bell Beat 3
1-6	LoFi Stack 2	3-6	LoFi Stack 3	5-6	Stack Pad 1	7-6	LoFi Stack 4
1-7	Noise FX 1	3-7	Stack Pad 2	5-7	Pop Beat 1	7-7	Pop Beat 3
2-1	LoFi Pad	3-8	Stack Pad ARP	5-8	Noise Beat 6	7-8	Bell Stack
2-2	Pop Beat 2	4-1	Stack Lead	6-2	Noise Beat 8	8-2	Dance Beat 4
2-3	Techno Saws	4-2	Stack Lead	6-3	Sweep Pad 1	8-3	Poly Brass
2-4	Ring Bell	4-3	BPM Pad	6-4	Bell ARP		

Audio CD Contents



Track		
1	Patch C11	Bass 1
2	Patch C41	Bass 2
3	Patch C12	SyncLead 1
4	Patch D18	Comp-F Lead
5	Patch C13	Slicer 1
6	Patch C23	Ring Bell
7	Patch C25	Noise Pad
8	Performance 1-1	Power Beat
9	Performance 1-3	HipHop Beat 1
10	Effect	Step Flanger
11	Effect	Ring Modulator
12	Chord Memory	Form 17.c
13	Arpeggio	Style 16.a
14	Arpeggio	Style 52.a
15	Original Demo Song	Natal Dance WATUSI (COLDFEET) 2001 © WATUSI
16	SH-32 Internal demo song	TRAVELER WALL5 2001 © Roland Corporation
17	SH-32 Internal demo song	SPANK SHIBUICHI ABE (from PCM) 2001 © Roland Corporation
18	SH-32 Internal demo song	CompFusion Ken Suzuki 2001 © Roland Corporation

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